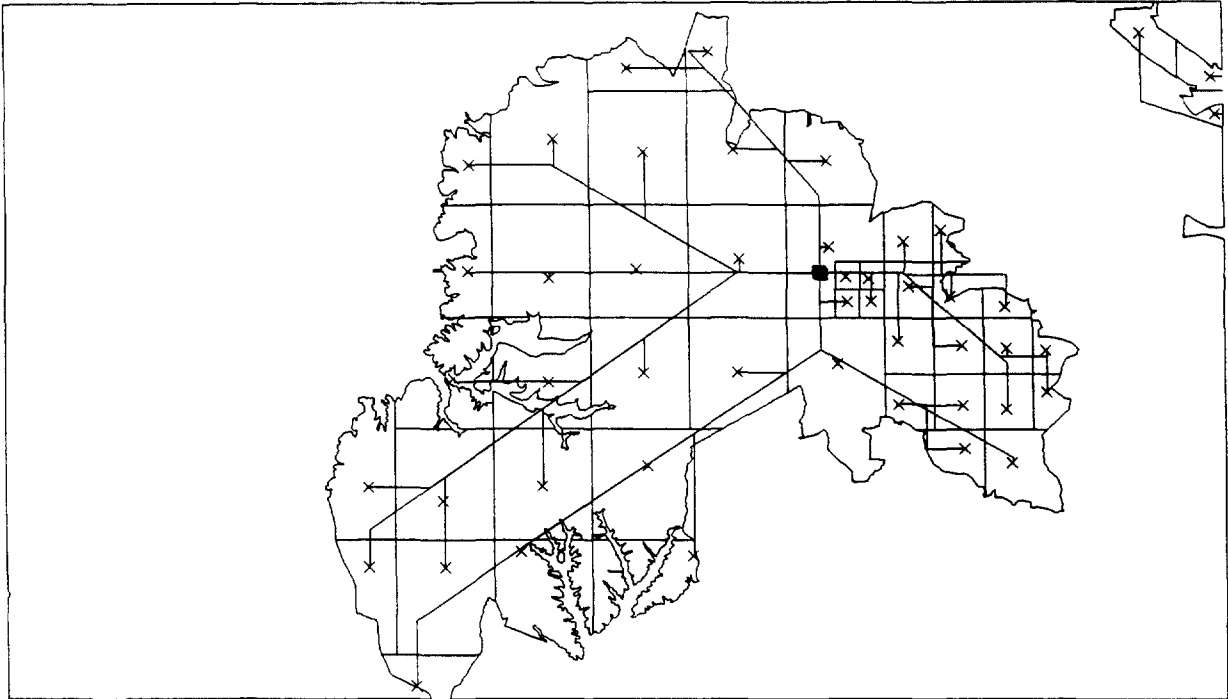


BCPM DATA SPECIFICATIONS

GIS Data

Feeder Design

■ Feeder / Sub-feeder Design



- Main Feeder will emanate from Central Office in a N, S, E, W direction for 10,000ft
- Main Feeder will be limited in length to approximately the CO boundary
- After the 10,000 feet the Main Feeder will
 - Split if the line count in the center 1/3 of the quadrant contains less than 30% of the lines (after the 10,000 ft distance from the main office)
 - The split will point 2 main feeders out to the Population Centroid in each half of the quadrant (excluding the first 10,000ft)
 - Remain Single if the line count in the center 1/3 of the quadrant is greater than 30%.
 - This main feeder will be pointed to the population centroid of the entire quadrant (excluding the first 10,000ft)
- Sub-feeder will run Vertical in East and West Quadrant, Horizontal in North and South Quadrant.
- For the Main feeder within 10,000ft of the CO, Sub-feeder may run every 1/200 of a degree boundary. Conceptually, it would run up or down the center of all the imaginary small

BCPM DATA SPECIFICATIONS

GIS Data

(1/200) grids. Those road centroids that fall within the 1/200 of a degree boundary will be served off of a shared sub-feeder. If no road centroid exists, then no sub-feeder will be run.

- Beyond the 10,000ft distance from the CO, Sub-feeder will run once at most once in every 4/100 of a degree boundary. Conceptually, it would run up and down (or horizontally) the center of all the imaginary large grids. Ideally it should run up or down to minimize the distance to the grids in the 4/100 of a degree swatch.
- Part 2 Sub-feeder will run from Sub-feeder to Road Centroid of each Grid (back and forward)
- Grids will be assigned to sub-feeder that is closest (back-feed is possible)
 - If the Sub-feeder run between a Grid and the previous point (adjoining grid or main-feeder) is greater than 1.5 large grid lengths, reassign the Grid to the other adjoining Grid if the distance is shorter.

Quadrant Data

- Once the Grids have been formed, Quadrants are formed in each grid (except the 1/200 resulting grid)
 - The quadrants are formed at the cross-hair of the Grid's road centroid
 - This implies that the Quads are not of equal size
- The data from the 1/200 grids (before re-aggregation) should be retained to develop the data within each quadrant
 - This Includes: Housing Units, Households, Business Lines, Road Length, and Road Centroid
- Although there are 4 quadrants, data may not exist for all 4 (some 1/200 grid data will have no data apportioned to it). Therefore, plant may not be built to all 4 quadrants

Data Requirements

(All files are currently in design stage. What follows is the current layouts)

- Base Grid File: Contains basic data for Grid

Currently the file layout is defined as follows:

- Clli
- Grid ID (LAT_LONG
- Latitude at Road Centroid
- Longitude at Road Centroid

BCPM DATA SPECIFICATIONS

GIS Data

- FDI Code (Feeder routing code)
- **Centroid Distance Feet**
- Main Feeder Length
- Sub-feeder Length
- Part 2 Sub-feeder Length
- **Total GRID Households**
- **Total Grid Housing Units**
- Number of Housing Units in Single-Unit Detached Structures
- Number of Housing Units in Single-Unit Attached
- Number of Housing Units in Two-Unit Structures
- Number of Housing Units in 3- to 4-Unit Structures
- Number of Housing Units in 5- to 9-Unit Structures
- Number of Housing Units in 10- to 19-Unit Structures
- Number of Housing Units in 20- to 49-Unit Structures
- Number of Housing Units in 50-or-Greater-Unit Structures
- Number of Housing Units that are Mobile Homes
- Number of Housing Units that are None of the Above
- **Total GRID Business Lines**
- **Total GRID Business Locations**
- Area-sq Miles
- Depth to Bedrock (Inches)
- Rock Hardness
- Surface Soil Texture
- Water Table Depth (Feet)
- Minimum Soil Slope
- Maximum Soil Slope
- **Upper Left Quadrant (ULQ) Number of Housing Units**
- **ULQ Number of Households**
- **ULQ Number of Business Lines**
- **ULQ Road Length**
- **ULQ Road Reduced Area**
- **ULQ Road Centroid Latitude**
- **ULQ Road Centroid Longitude**
- **Upper Right Quadrant (URQ) Number of Housing Units**
- **URQ Number of Households**
- **URQ Number of Business Lines**
- **URQ Road Length**
- **URQ Road Reduced Area**
- **URQ Road Centroid Latitude**
- **URQ Road Centroid Longitude**
- **Lower Left Quadrant (LLQ) Number of Housing Units**
- **LLQ Number of Households**
- **LLQ Number of Business Lines**

BCPM DATA SPECIFICATIONS

GIS Data

- LLQ Road Length
- LLQ Road Reduced Area
- LLQ Road Centroid Latitude
- LLQ Road Centroid Longitude
- Lower Right Quadrant(LRQ) Number of Housing Units
- LRQ Number of Households
- LRQ Number of Business Lines
- LRQ Road Length
- LRQ Road Reduced Area
- LRQ Road Centroid Latitude
- LRQ Road Centroid Longitude

■ **CLLI Terrain File:** Provides average terrain statistics by CO

A terrain file by CLLI is necessary for the Transport module. The file would contain the average terrain statistics for the entire Wire Center Territory.

- CLLI
- Terrain Items:
- Minimum Depth To Bedrock
- Predominant Rock Hardness
- Predominant Surface Soil Texture
- Minimum Water Table Depth
- Minimum Soil Slope
- Maximum Soil Slope

■ **CLLI Information File:** Provides information on ownership of office

A cross-reference file is necessary to allow roll up of values to operating company. The file would contain the following:

- CLLI Code
- Operating Company
- CO Type

■ **Company Information File:** Provides information on Company Relationships

A cross-reference file is necessary to allow roll up of values to Parent company. The file would contain the following:

- Operating Company
- Parent Company

BCPM DATA SPECIFICATIONS

GIS Data

- Company Size (Small, Medium, Large)

■ CBG to Grid Conversion File: File that Maps CBGs to Grids

A *cross-reference* file is necessary to allow roll up of values for a CBG.

We imagine a CBG cross reference file to contain the following, for each intersection of a CBG and a grid cell or micro-grid cell:

- CBG FIPS Code
- CLLI Code
- Longitude of center point of this set of re-aggregated grid cells
- Latitude of center point of this set of re-aggregated grid cells
- Fraction of CBG's Households contained in this set of re-aggregated grid cells
- Fraction of CBG's Housing Units contained in this set of re-aggregated grid cells
- Fraction of CBG's Business Lines contained in this set of re-aggregated grid cells